AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. - 5. (canceled).

6. (currently amended): A heterogeneous synthesis reactor comprising:

an external shell;

at least a radial or axial-radial catalytic bed, provided with a gas inlet perforated cylindrical wall and a gas outlet perforated cylindrical wall, extended in said shell;

~~characterized in that it further comprises in said catalytic bed:~~

an unperforated cylindrical wall coaxial to said gas outlet wall in said catalytic bed, said unperforated cylindrical wall extending from an upper end of said gas outlet wall along a perforated portion of said gas outlet wall and for a predetermined length in said catalytic bed such that once the catalyst is loaded within said catalytic bed at least a portion of said unperforated cylindrical wall remains below the upper level reached by said catalyst , so as to define a free-space between the perforated gas outlet wall and the unperforated wall, for the passage of a part of the gas leaving said catalytic bed through said portion of the gas outlet wall facing said free-space, said free space having a thickness great enough to allow said passage without causing an additional pressure drop; and

a cap which closes said free-space between the unperforated wall and the gas outlet wall , in proximity of the upper end of the latter, preventing thereby a bypass of said catalytic bed or a recycling to the catalytic bed of the gas entering and leaving the reactor respectively,

wherein the catalytic bed is not closed at the top so as to allow for the passage of reaction gases.

7. (previously presented): The reactor according to claim 6, wherein said unperforated wall extends for a length corresponding to 5%-50% of the length of said gas outlet wall.

8. (previously presented): The reactor according to claim 6, wherein said free-space is substantially annular and has a thickness between 0.5 and 10 cm.

9. (previously presented): The reactor according to claim 6, wherein said unperforated wall is supported by said gas outlet wall (8).

10. (previously presented): The reactor according to claim 9, wherein said gas outlet wall has a diameter smaller than the diameter of said gas inlet wall and of said unperforated wall , wherein said unperforated wall is supported by a gas-tight horizontal baffle which protrudes above the upper end of said gas outlet wall, and rests on the same.